

AMENDMENTS TO THE SPECIFICATION

1. Paragraph [0017], last sentence:

Vaporization of liquids other than fuels is also useful for generation of vapor in non-fuel applications, such as dispersal of fragrances, antiseptics, inhalants and other medical compositions, insect [~~repellants~~] repellents and attractants, crop treatments, chemical vapor deposition applications, and the like.

2. Paragraph [0042], last sentence:

In some embodiments, a liquid feed preheat component is provided on the liquid feed side of the vaporizer to accelerate heating of the liquid feed prior to introduction to the vaporization ~~Component~~ component.

3. Paragraph [0048], in its entirety:

FIG. 2B shows an SEM image illustrating another alternative capillary network microstructure having a reticulated foam or strut structure for the material comprising a vaporization component.

4. Paragraph [0102], in its entirety:

FIGS. 3A and 3B illustrate an alternative configuration of [a] capillary pump 40 of the present invention having a tubular configuration in which feed liquid is delivered to an external surface of the capillary pump and vapor is released at an internal cavity of the capillary pump. In this embodiment, liquid feed chamber 42 having a liquid permeable outer wall 41 is provided as a generally annular chamber in communication with a liquid feed source. A porous, generally annular insulator component 44 serves as the feed liquid supply interface and is provided between liquid feed chamber 42 and vaporization

component 46. In this embodiment, [a] heater component 48 is provided in association with and/or in proximity to the vapor release surface of vaporization component 46. Heater component 48 and the vapor release surface of vaporization component 46 may have an annular, cylindrical configuration or may be provided as a convoluted surface, as shown in FIG. [2B] 3B, to increase the heater and vaporization release surface area. Vapor collection chamber 50 is provided at a central "core" of the capillary pump. Vapor may be controllably, and/or programmably released at selected withdrawal ports 45 in communication with vapor collection chamber 50. At least one end of capillary pump 40 may be substantially sealed at end cap 43, permitting vapor release through ports 45. The other end of capillary pump 40 may also be sealed using an end cap, permitting liquid flow into liquid feed chamber 42.

5. Paragraph [0103], in its entirety:

[0103] FIGS. 4A and 4B illustrate yet another configuration of a capillary pump 60 having a tubular configuration in which feed liquid is delivered to an internal surface of the capillary pump and vapor is released at an external surface of the capillary pump. In this exemplary embodiment, liquid is delivered through ~~[an]~~ internal liquid feed chamber 62. The walls of liquid feed chamber 62 may be generally cylindrical, as shown, or they may be provided in a convoluted configuration to increase the surface area for liquid feed. Liquid contacts a feed liquid supply interface of porous insulator component 64, which is in contact with porous vaporization component 66. A vapor release surface of vaporization component 66 may be provided as a generally cylindrical surface, or the surface may be convoluted to increase its surface area, as shown in FIG. [3B] 4B. Heater 68 may also be provided as a generally cylindrical surface, or a convoluted surface and preferably matches the configuration of the vapor release surface. [A ~~vapor~~] Vapor collection chamber 70 is formed external to the heater and vapor release surface and may be defined by [a] vapor impermeable external wall 72. Vapor may be controllably, and/or programmably released at selected withdrawal ports in communication with vapor collection chamber 70. Vapor withdrawal ports may be provided, for example, as orifices 74 in external wall 72.

6. Paragraph [0115], first sentence:

FIG. 7 illustrates another embodiment of a capillary pump 38 comprising, in the direction of the fluid flow pathway 30, insulator component 14, vaporization component 16, [a] heater component 36 in communication with thermally and/or electrically conductive leads 35 associated with or provided in proximity to the vapor release surface of vaporization component 16, vapor collection chamber 52, and orifice plate 50 having a plurality of orifices 20.

7. Paragraph [0123], last sentence:

The surface treatment may alter the catalytic nature of the surface in order to promote reactions ~~which that~~ would cause the low-volatility or non-volatile liquid components to evaporate and/or retard reactions that would cause the deposition of reaction products rather than [tø] allow such material to remain in the capillary pump [components] as deposits that may degrade pump operation.

8. Paragraph [0128], in its entirety:

In liquid fuel vaporization capillary pump applications, vaporized fuel is generally released from the vapor release component, mixed with oxygen and combusted in the general area outside the vapor release component of the capillary pump. In this circumstance, heat generated from combustion may be conducted to the heat transfer component, and from there to the vaporization component. Thermal energy generated by combustion may be returned to the heat transfer component by a high [-] thermal [-] conductivity solid member, such as a metal strut, [~~ø~~-a] heat pipe, capillary pump loop, etc. For example, conductive elements may form a part of a burner component that is in thermal communication with the thermal transfer component. Heat may be applied by an external source to initiate the production and release of vapor and combustion.

Thereafter, a steady state condition is achieved in which a portion of the heat generated

by combustion is used to produce vapor^[5] which ~~is~~, in turn, is combusted.

9. Paragraph [0144], in its entirety:

[0144] Capillary pumps may be used singly or in coordinated arrays. FIG. 11 illustrates a capillary pump array of the present invention in which multiple capillary pumps 100, having integrated or associated heaters, are powered by a common power source and controller 102. The capillary pump array may be connected to power source and controller 102 in series or in parallel. The controller may be programmable and may provide automated and/or ~~direct user~~ manual control of the capillary pump array. Capillary pump features such as heater input, liquid feed input, vaporization component temperature, vapor output, and the like may be monitored and programmably controlled. A common liquid feed reservoir 101 and/or liquid feed delivery system may also be used to provide liquid feed to ~~the~~ capillary pumps 100 forming the array. Similarly, the output vapor from the array of capillary pumps may be collected within a common vapor pressurization chamber and subsequently released, thereby allowing the integrated array device to output one or more vapor streams having a total flow substantially greater than that of a single capillary pump.

10. Paragraph [0148] in its entirety:

[0148] FIG. 14 illustrates yet another capillary pump environment in which a capillary pump 124, or an array of capillary pumps, provides vapor for use in ~~a~~ turbine device 125. In this application, liquid fuel is conveyed through a liquid supply line to one or more capillary pumps 124 and vapor output from the capillary pump(s) is introduced to ~~a~~ fuel combustion zone 126 of turbine device 125 in which a diffuser is in communication with ~~a~~ compressor 128 that draws air ~~[(or gases)]~~ or gases into combustion chamber 126. Combustion in chamber 126 drives turbine 129 and spent gases are discharged through nozzle 130. In some embodiments, the exhaust gases may be conveyed to a heat exchanger to extract heat for to feedback to power the capillary pump(s) for vaporization, or to preheat air before it enters the combustion chamber.